

## IMAGES IN CARDIOLOGY .....

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**Assessment of aortic root inflammation in a patient with systemic vasculitis using F-18 FDG positron emission tomography**

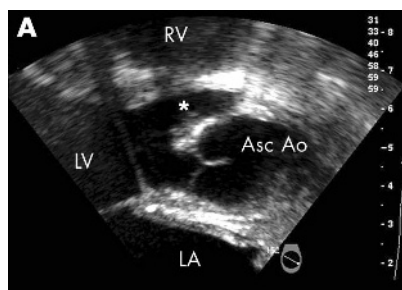
**A** 38-year-old man was evaluated for dizziness and exertional chest pain. He had undergone aortic valve replacement (AVR) because of severe aortic regurgitation (AR) three years previously at another hospital. At that time, he was diagnosed with Behçet's disease and received immunosuppressive therapy including steroid and azathioprine. One year later after AVR, he was found to have paravalvular leakage and severe AR, and redo AVR was performed. Four months later, dehiscence of the prosthetic aortic valve was noted and aortic root replacement with a stentless porcine valve was performed. Seven months after aortic root replacement surgery, the patient experienced dizziness and chest discomfort. A coronary angiogram showed significant stenoses at the ostium of the left main coronary artery and

right coronary artery. Subsequent percutaneous coronary intervention with stenting was performed at the left main ostial and right coronary artery ostial lesions. The patient was also found to have complete atrioventricular (AV) block. In addition, echocardiography showed a detached aortic graft but no significant AR was noted. He was referred to our institution for further evaluation. A permanent pacemaker was inserted to resolve the complete AV block. Transoesophageal echocardiography showed a detached aortic graft at the level of the aortic root without significant regurgitation (panel A). F-18 FDG positron emission tomography (PET) was performed to assess aortic root inflammation and revealed increased uptake along the aortic root, suggesting active inflammation (panel B). Colchicine was administered. Seven

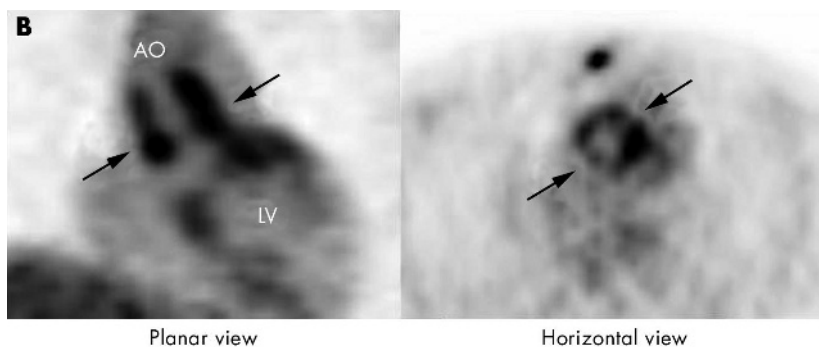
months later, the patient began to have exertional chest pain and a coronary angiogram showed in-stent restenosis at the left main coronary artery. Subsequently, balloon angioplasty with cutting balloon was successfully performed at the referring hospital. One month later following the balloon angioplasty, recurrent angina was noted and the patient was admitted to our hospital for coronary artery bypass graft surgery. On the third day in hospital, the patient complained of severe chest pain and subsequent hypotension and hypoxia was noted. Despite vigorous resuscitation, the patient died.

This case shows that F-18 FDG PET may be useful for the non-invasive assessment of aortic root inflammation.

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(A) Multiplane long axis view (152°) of transoesophageal echocardiography showing the detached aortic graft with free space between the aortic wall and graft (asterisk).



(B) F-18 FDG PET scan showing increased uptake along the aortic root suggestive of active inflammation.

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